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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,615	12/28/2000	Lawrence A. Denenberg	782.1092/RAG	5948
21171	7590	03/11/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			LAO, TIM P	
			ART UNIT	PAPER NUMBER
			2655	5

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/749,615

Applicant(s)

DENENBERG ET AL.

Examiner

Tim Lao

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-16, 18-29, 31, 32 and 34-48 is/are rejected.
- 7) ☒ Claim(s) 13, 17, 30 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12, 14-16, 18-19, 23-29, 31-32, 34-35, 39-44, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appelt et al. (U.S. Patent 6,601,026 B2) in view of Weber (U.S. Patent 6,434,524 B1).

Claim(s)

Appelt et al. show:

1

A method of providing an interactive voice response system (the natural language query system, Fig.1: **100**, col.5, ll.5-6), comprising:

recognizing a spoken question (user queries, col.5, ll.5-6) using a grammar (grammar, col.2, ll.30-33; col.3, ll.7-12 & query grammar, col.3, ll.14-17) that is updated (update grammar rules, Fig.2: **212**; col.7, ll.33-52 & update query grammar rules, Fig.9: **518**, col.12, ll.23-47) from sources of information (the corpus **103** of free-text documents, col.5, ll.5-14) external to the interactive voice response system.

*{1. The free-text document **103** can be located on a remote web server external to the system **100**. (col.5, ll.9-14, ll.21-23; col.6, ll.27-31; col.1, ll.28-31)}*

*2. Fig.2 illustrates the process where grammar rules are updated based on information extracted from the free-text document **103**. (col.7, ll.33-52)*

*3. Fig.9 illustrates the process where query grammar rules for recognizing user queries are updated. (col.12, ll.23-47)*

*4. Query grammar files and the grammar files **310**, which contain extracted information from texts, are analogous. (col.11, ll.8-11; col.10, ll.6-10)}*

	<p><u>Appelt et al. do not show:</u></p> <p>automatically updating the grammar.</p> <p><u>However, Weber teaches:</u></p> <p>automatically updating a grammar. (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the recognition and updating method of Appelt et al. to include the method of automatic updating of grammar as taught by Weber in order to automatically update grammar for recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
Claim(s) 2	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 1, further comprising:</p> <p>automatically obtaining at least one set of topics (topic extraction, e.g., 'joint venture', col.5, ll.37-45) for questions spoken by a user (user queries) from the sources of information (free-text document <b>103</b>).</p> <p><i>{The topic and keywords are automatically extracted by the automation <b>300</b>. (col.7, ll.53-57; col.8, ll.1-20; col.10, ll.6-16)}</i></p>
Claim(s) 3	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 2, wherein said obtaining uses at least one communication connection (the network <b>530</b>, col.12, ll.48-57; col.3, ll.25-28) between the interactive voice response system (the natural language query system <b>100</b>) and at least one news report provider (news service provider, col.3, ll.5-6; col.5, ll.9-12) to obtain news reports (news articles of Fig.7: <b>502</b> &amp; Fig.8).</p> <p><i>{Exemplary news service providers are New York Times (Fig.7: <b>506</b>) and PR Newswire (Fig.8).}</i></p>

Claim(s) 4	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 3, wherein said obtaining includes repeatedly (continuously) accessing the at least one news report provider (news service provider, col.4, ll.14-16; col.5, ll.9-12) via a computer network (the network <b>530</b>, col.12, ll.48-57).  <i>{The real-time news services is continuously accessed for the information database, e.g., the free-text documents <b>103</b>, to be continuously updated.}</i></p>
Claim(s) 5	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 4, further comprising:</p> <p>extracting keywords (e.g., topic: 'joint venture', objects/keywords: 'IBM', 'Microsoft', col.5, ll.44-46, ll.60-62; or topic: 'joint venture', object/keyword: 'SBC', col.6, ll.48-51) from the news reports (news articles of Fig.7: <b>502</b> &amp; Fig.8); (col.5, ll.37-67) and</p> <p>updating the grammar using the keywords. (col.7: ll.33-52)</p>
Claim(s) 6	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 5, further comprising:</p> <p>storing at least part (e.g., index with list of terms or words, col.1, ll.52-64; col.2, ll.30-34, ll.60-67) of the news reports (Fig.7: <b>502</b>; Fig.8); and  <i>{The indices are stored in database <b>109</b>. (col.5, ll.34-37)}</i></p> <p>outputting at least one of the news reports (Fig.7: <b>502</b>; Fig.8) when the spoken question (e.g., "Tell me about joint ventures involving SBC in the Communication Services Sector", col.11, ll.53-55) contains at least one of the keywords (e.g., 'joint ventures' and 'SBC' in the summary <b>504</b>, col.11, ll.58-65) extracted therefrom.  <i>{The keywords are extracted by information extraction engine <b>108</b>. (col.5, ll.21-24, ll.38-41)}</i></p>
Claim(s) 7	<p><u>Appelt et al. show:</u></p>

	<p>A method as recited in claim 6, further comprising:</p> <p>identifying (e.g., highlighting) the keywords (e.g., 'joint ventures', 'SBC', Fig.8: <b>508</b>; col.12, ll.2-5) from information included in the news reports (Fig.7: <b>502</b>; Fig.8).</p>
Claim(s) 8	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 6, further comprising:</p> <p>comparing words in the news reports with a list of potential keywords (e.g., relevant keywords) to identify the keywords for said extracting. (e.g., pre-filtering, Fig.1: <b>106</b>; col.6, ll.25-29)</p>
Claim(s) 9	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 6,</p> <p>wherein said storing stores at least one file (text corpus <b>103</b> containing text from multimedia source <b>550</b>: col.5, ll.14-24; Fig.11; col.14, ll.9-14) containing an audio signal (sound stream) related to at least one of the news reports (Fig.7: <b>502</b>; Fig.8); (col.3, ll.37-45; col.4, ll.34-40) and</p> <p>wherein said outputting plays back (through the TTS system, Fig.10: <b>537</b>; col.13, ll.39-43; col.4, ll.30-32) the at least one audio file.</p>
Claim(s) 10	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 6, wherein said extracting is performed on text data associated with the audio signal (e.g., sound stream of multimedia source <b>550</b>, col.5, ll.14-24).</p>
Claim(s) 11	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 6,</p>

	<p>wherein said storing stores at least one text file (text format documents, col.5, ll.14-15) related to at least one of the news reports (Fig.7: 502; Fig.8); and</p> <p>wherein said outputting includes text-to-speech (TTS 537, col.13, ll.33-43) conversion of the at least one text file.</p>
Claim(s) 12	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 3, further comprising:</p> <p>determining the at least one news report provider (e.g., New York Times (Fig.7: 506) or PR Newswire (Fig.8)) based on selection by the user.</p> <p><i>{In the case of an article by more than one news report provider, the user can select the article by a particular news report provider by clicking on a hyperlink. (col.11, ll.66-67)}</i></p>
Claim(s) 14	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 12, wherein said determining is performed via a computer network connection (the internet 530, col.12, ll.48-53) between the interactive voice response system (the natural language query system 100) and a computer (workstations 532) operated by the user.</p>
Claim(s) 15	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 1, further comprising:</p> <p>automatically obtaining grammar words (topic-specific information, e.g., 'joint venture', 'SBC', col.7, ll.49-50) to be added to the grammar (e.g., grammar template files 310 which are located in database 109: col.7, ll.46-48; col.10, ll.6-11) from at least one message (Fig.7: 502; Fig.8) for a user.</p> <p><i>{1. The topic and keywords are automatically extracted by the automation 300. (col.7, ll.53-57; col.8, ll.1-20; col.10, ll.6-16)</i></p> <p><i>2. The news article (Fig.7: 502; Fig.8) is a message which can be represented in text format (col.5, ll.14-15) or in sound stream (col.5, ll.15-17; col.14, ll.9-12)}</i></p>

Claim(s) 16	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 15, further comprising:</p> <p>comparing message words (topic &amp; keywords) in the at least one message (Fig.7: 502; Fig.8) with information in a global information database (e.g., searching the database 109 by information extraction and query engine 104) to determine for each message word (e.g., 'joint venture', 'SBC') whether there are any corresponding questions (e.g., "Tell me about joint ventures involving SBC in the Communication Service Sector" or "Did Barnes &amp; Nobel acquire anyone this year?", col.6, ll.48-51) that can be answered by information in the global information database (database 109); (col.6, ll.43-55) and</p> <p>updating the grammar (grammar rules or files) with the corresponding questions and related message words. (col.7, ll.33-52)</p>
Claim(s) 18	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 15, further comprising:</p> <p>adding words (topic-specific information, e.g., 'joint venture', 'SBC', col.7, ll.49-50) to the grammar (e.g., grammar template files 310 which are located in database 109: col.7, ll.46-48; col.10, ll.6-11) based on a source of the message (multimedia source 550).</p> <p><u>Appelt et al. do not show:</u></p> <p>automatically adding words to a grammar.</p> <p><u>Weber teaches:</u></p> <p>automatically adding words (e.g., new information) to a grammar (grammar files). (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Appelt et al. to include the method of automatic updating of grammar as taught by Weber in order to automatically update grammar for</p>



	recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).
Claim(s) 19	<p><u>Appelt et al. show:</u></p> <p>A method as recited in claim 18, wherein the message (Fig.8) is a voicemail message (e.g., sound stream, col.14, ll.9-12; col.5, ll.14-20) and the source of the message is determined based on automatic number identification (message-ID: Fig.8: <b>506</b>, ll.3 of 1<sup>st</sup> block) provided when the voicemail message was received.</p>
Claim(s) 23	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium (CD-ROM, col.15, ll.34-43) storing at least one program for controlling an interactive voice response system to perform a method comprising:</p> <p>recognizing a spoken question (user queries, col.5, ll.5-6) using a grammar (grammar, col.2, ll.30-33; col.3, ll.7-12 &amp; query grammar, col.3, ll.14-17) that is updated (update grammar rules, Fig.2: <b>212</b>; col.7, ll.33-52 &amp; update query grammar rules, Fig.9: <b>518</b>, col.12, ll.23-47) from sources of information (the corpus <b>103</b> of free-text documents, col.5, ll.5-14) external to the interactive voice response system.</p> <p><i>{1. The free-text document <b>103</b> can be located on a remote web server external to the system <b>100</b>. (col.5, ll.9-14, ll.21-23; col.6, ll.27-31; col.1, ll.28-31)</i></p> <p><i>2. Fig.2 illustrates the process where grammar rules are updated based on information extracted from the free-text document <b>103</b>. (col.7, ll.33-52)</i></p> <p><i>3. Fig.9 illustrates the process where query grammar rules for recognizing user queries are updated. (col.12, ll.23-47)</i></p> <p><i>4. Query grammar files and the grammar files <b>310</b>, which contain extracted information from texts, are analogous. (col.11, ll.8-11; col.10, ll.6-10)}</i></p> <p><u>Appelt et al. do not show:</u></p> <p>automatically updating the grammar.</p> <p><u>However, Weber teaches:</u></p>

	<p>automatically updating a grammar. (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the recognition and updating method of Appelt et al. to include the method of automatically updating a grammar as taught by Weber in order to automatically update grammar for recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
Claim(s) 24	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 23, wherein said method further comprises:</p> <p>automatically obtaining at least one set of topics (topic extraction, e.g., 'joint venture', col.5, ll.37-45) for questions spoken by a user (user queries) from the sources of information (free-text document <b>103</b>).</p> <p><i>{The topic and keywords are automatically extracted by the automation <b>300</b>. (col.7, ll.53-57; col.8, ll.1-20; col.10, ll.6-16)}</i></p>
Claim(s) 25	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 24, wherein said obtaining uses at least one communication connection (the network <b>530</b>, col.12, ll.48-57; col.3, ll.25-28) between the interactive voice response system (the natural language query system <b>100</b>) and at least one news report provider (news service provider, col.3, ll.5-6; col.5, ll.9-12) to obtain news reports (news articles of Fig.7: <b>502</b> &amp; Fig.8).</p> <p><i>{Exemplary news service providers are New York Times (Fig.7: <b>506</b>) and PR Newswire (Fig.8).}</i></p>
Claim(s) 26	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 25, wherein said obtaining includes repeatedly (continuously) accessing the at least one news report provider (news service provider, col.4, ll.14-16; col.5, ll.9-12) via a computer network (the network <b>530</b>, col.12, ll.48-</p>

	<p>57).</p> <p><i>{The real-time news services is continuously accessed for the information database, e.g., the free-text documents 103, to be continuously updated.}</i></p>
Claim(s) 27	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 26, wherein said method further comprises:</p> <p>extracting keywords (e.g., topic: 'joint venture', objects/keywords: 'IBM', 'Microsoft', col.5, ll.44-46, ll.60-62; or topic: 'joint venture', object/keyword: 'SBC', col.6, ll.48-51) from the news reports (news articles of Fig.7: 502 &amp; Fig.8); (col.5, ll.37-67) and</p> <p>updating the grammar using the keywords. (col.7: ll.33-52)</p>
Claim(s) 28	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 27, wherein said method further comprises:</p> <p>storing at least part (e.g., index with list of terms or words, col.1, ll.52-64; col.2, ll.30-34, ll.60-67) of the news reports (Fig.7: 502; Fig.8); and</p> <p><i>{The indices are stored in database 109. (col.5, ll.34-37)}</i></p> <p>outputting at least one of the news reports (Fig.7: 502; Fig.8) when the spoken question (e.g., "Tell me about joint ventures involving SBC in the Communication Services Sector", col.11, ll.53-55) contains at least one of the keywords (e.g., 'joint ventures' and 'SBC' in the summary 504, col.11, ll.58-65) extracted therefrom.</p> <p><i>{The keywords are extracted by information extraction engine 108. (col.5, ll.21-24, ll.38-41)}</i></p>
Claim(s) 29	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 25, wherein said method further comprises:</p>

	<p>determining the at least one news report provider (e.g., New York Times (Fig.7: 506) or PR Newswire (Fig.8)) based on selection by the user.</p> <p><i>{In the case of an article by more than one news report provider, the user can select the article by a particular news report provider by clicking on a hyperlink. (col.11, ll.66-67)}</i></p>
<p>Claim(s) 31</p>	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 23, wherein said method further comprises:</p> <p>automatically obtaining grammar words (topic-specific information, e.g., 'joint venture', 'SBC', col.7, ll.49-50) to be added to the grammar (e.g., grammar template files 310 which are located in database 109: col.7, ll.46-48; col.10, ll.6-11) from at least one message (Fig.7: 502; Fig.8) for a user.</p> <p><i>{1. The topic and keywords are automatically extracted by the automation 300. (col.7, ll.53-57; col.8, ll.1-20; col.10, ll.6-16)</i></p> <p><i>2. The news article (Fig.7: 502; Fig.8) is a message which can be represented in text format (col.5, ll.14-15) or in sound stream (col.5, ll.15-17; col.14, ll.9-12)}</i></p>
<p>Claim(s) 32</p>	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 31, wherein said method further comprises:</p> <p>comparing message words (topic &amp; keywords) in the at least one message (Fig.7: 502; Fig.8) with information in a global information database (e.g., searching the database 109 by information extraction and query engine 104) to determine for each message word (e.g., 'joint venture', 'SBC') whether there are any corresponding questions (e.g., "Tell me about joint ventures involving SBC in the Communication Service Sector" or "Did Barnes &amp; Nobel acquire anyone this year?", col.6, ll.48-51) that can be answered by information in the global information database (database 109); (col.6, ll.43-55) and</p> <p>updating the grammar (grammar rules or files) with the corresponding questions and related message words. (col.7, ll.33-52)</p>

Claim(s) 34	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 31, wherein said method further comprises:</p> <p>adding words (topic-specific information, e.g., 'joint venture', 'SBC', col.7, ll.49-50) to the grammar (e.g., grammar template files <b>310</b> which are located in database <b>109</b>: col.7, ll.46-48; col.10, ll.6-11) based on a source of the message (multimedia source <b>550</b>).</p> <p><u>Appelt et al. do not show:</u></p> <p>automatically adding words to a grammar.</p> <p><u>Weber teaches:</u></p> <p>automatically adding words (e.g., new information) to a grammar (grammar files). (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Appelt et al. to include the method of automatic updating of grammar as taught by Weber in order to automatically update grammar for recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
Claim(s) 35	<p><u>Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 34, wherein the message (Fig.8) is a voicemail message (e.g., sound stream, col.14, ll.9-12; col.5, ll.14-20) and the source of the message is determined based on automatic number identification (message-ID: Fig.8: <b>506</b>, ll.3 of 1<sup>st</sup> block) provided when the voicemail message was received.</p>
Claim(s) 39	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system (the natural language query system, Fig.1: <b>100</b>,</p>

	<p>col.5, ll.5-6), comprising:</p> <p>recognition means for recognizing a spoken question (user queries, col.5, ll.5-6) using a grammar (grammar, col.2, ll.30-33; col.3, ll.7-12 &amp; query grammar, col.3, ll.14-17); and</p> <p>update means for updating the grammar (update grammar rules, Fig.2: <b>212</b>; col.7, ll.33-52 &amp; update query grammar rules, Fig.9: <b>518</b>, col.12, ll.23-47) from sources of information (the corpus <b>103</b> of free-text documents, col.5, ll.5-14) external to said interactive voice response system.</p> <p><u>Appelt et al. do not show:</u></p> <p>means for automatically updating the grammar.</p> <p><u>However, Weber teaches:</u></p> <p>means for automatically updating a grammar. (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the recognition and updating means of Appelt et al. to include the means of automatically updating a grammar as taught by Weber in order to automatically update grammar for recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
Claim(s) 40	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 39, further comprising:</p> <p>means (the network <b>530</b>, col.12, ll.48-57; col.3, ll.25-28) for communicating between the interactive voice response system (the natural language query system <b>100</b>) and at least one news report provider (news service provider, col.3, ll.5-6; col.5, ll.9-12) to obtain news reports (news articles of Fig.7: <b>502</b> &amp; Fig.8).</p> <p><i>{Exemplary news service providers are New York Times (Fig.7: <b>506</b>) and PR Newswire (Fig.8).}</i></p>

Claim(s) 41	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 40, further comprising:</p> <p>extraction means for extracting keywords (e.g., topic: 'joint venture', objects/keywords: 'IBM', 'Microsoft', col.5, ll.44-46, ll.60-62; or topic: 'joint venture', object/keyword: 'SBC', col.6, ll.48-51) from the news reports (news articles of Fig.7: 502 &amp; Fig.8); (col.5, ll.37-67) and</p> <p>wherein said update means updates the grammar using the keywords. (col.7: ll.33-52)</p> <p><u>Appelt et al. do not show:</u></p> <p>update means automatically updates the grammar.</p> <p><u>However, Weber teaches:</u></p> <p>update means automatically updates a grammar. (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the recognition and updating means of Appelt et al. to include the means of automatically updating a grammar as taught by Weber in order to automatically update grammar for recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
Claim(s) 42	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 41, further comprising:</p> <p>means for storing at least part (e.g., index with list of terms or words, col.1, ll.52-64; col.2, ll.30-34, ll.60-67) of the news reports (Fig.7: 502; Fig.8); and</p> <p><i>{The indices are stored in database 109. (col.5, ll.34-37)}</i></p>

	<p>means for outputting at least one of the news reports (Fig.7: 502; Fig.8) when the spoken question (e.g., "Tell me about joint ventures involving SBC in the Communication Services Sector", col.11, ll.53-55) contains at least one of the keywords (e.g., 'joint ventures' and 'SBC' in the summary 504, col.11, ll.58-65) extracted therefrom.</p> <p><i>{The keywords are extracted by information extraction engine 108. (col.5, ll.21-24, ll.38-41)}</i></p>
Claim(s) 43	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 39, wherein said update means includes means for automatically obtaining grammar words (topic-specific information, e.g., 'joint venture', 'SBC', col.7, ll.49-50) to be added to the grammar (e.g., grammar template files 310 which are located in database 109: col.7, ll.46-48; col.10, ll.6-11) from at least one message (Fig.7: 502; Fig.8) for a user.</p> <p><i>{1. The topic and keywords are automatically extracted by the automation 300. (col.7, ll.53-57; col.8, ll.1-20; col.10, ll.6-16)</i></p> <p><i>2. The news article (Fig.7: 502; Fig.8) is a message which can be represented in text format (col.5, ll.14-15) or in sound stream (col.5, ll.15-17; col.14, ll.9-12)}</i></p>
Claim(s) 44	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 43, wherein said update means further includes:</p> <p>means comparing message words (topic &amp; keywords) in the at least one message (Fig.7: 502; Fig.8) with information in a global information database (e.g., searching the database 109 by information extraction and query engine 104) to determine for each message word (e.g., 'joint venture', 'SBC') whether there are any corresponding questions (e.g., "Tell me about joint ventures involving SBC in the Communication Service Sector" or "Did Barnes &amp; Nobel acquire anyone this year?", col.6, ll.48-51) that can be answered by information in the global information database (database 109); (col.6, ll.43-55) and</p> <p>means for updating the grammar (grammar rules or files) with the corresponding questions and related message words. (col.7, ll.33-52)</p>



	<p><u>Appelt et al. do not show:</u></p> <p>means for automatically updating the grammar.</p> <p><u>However, Weber teaches:</u></p> <p>means for automatically updating a grammar. (col.3, ll.4-7; col.12, ll.53-67)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the recognition and updating means of Appelt et al. to include the means of automatically updating a grammar as taught by Weber in order to automatically update grammar for recognizing spoken question from user. This way, the interactive voice response system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
Claim(s) 47	<p><u>Appelt et al. show:</u></p> <p>An information services system (Fig.12), comprising:</p> <p>at least one storage unit (RAM 620, ROM 622) to store a grammar and information (grammar template files 310, col.10, ll.6-16) for response to a question by a user (user query); {Grammar files 310 are located in database 109 (RAM 620, ROM 622).}</p> <p>at least one processor (610), coupled to said storage unit (RAM 620, ROM 622), programmed to update (col.7, ll.33-52) the grammar and the information from sources of information (free-text document 103 or multimedia source 550) external to the information services system, and to recognize a question spoken by the user. {The free-text document 103 can be located on a remote web server external to the system 100. (col.5, ll.9-14, ll.21-23; col.6, ll.27-31; col.1, ll.28-31)}</p> <p><u>Appelt et al. do not show:</u></p> <p>at least one processor, coupled to said storage unit, programmed to automatically update the grammar and the information.</p>

	<p><u>However, Weber teaches:</u></p> <p>at least one processor (Fig.1: <b>102</b>), coupled to said storage unit (Fig.1: <b>108</b>), programmed to automatically update (col.3, ll.4-7; col.12, ll.53-67) the grammar and the information.</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the processing capability of the system of Appelt et al. to include the processing capability of Weber in order to provide a information service system that can automatically update grammar for recognizing spoken question from user. This way, the information service system can adaptively learn the meaning of addition utterances, thereby enhancing the efficiency of the user interface (Weber, col.4, ll.3-8).</p>
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3. Claims 20-22, 36-38, and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appelt et al. (U.S. Patent 6,601,026 B2) in view of Weber (U.S. Patent 6,434,524 B1), and further in view of Uppaluru (U.S. Patent 5,915,001).

Claim(s) 20	<p><u>The modified Appelt et al. show:</u></p> <p>A method as recited in claim 18,</p> <p>wherein said method further comprises adding information to the grammar. (Weber, col.3, ll.4-7; col.12, ll.53-67)</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>the message is an e-mail message, and</p> <p>the source of information is from an address book entry for the sender of the e-mail.</p> <p><u>However, Uppaluru teaches:</u></p>
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	<p>Using e-mail message as a source of information retrieved for responding to user queries. (col.9, ll.38-50; col.29-49)</p> <p>Using address book entry as a source of information. (col.9, ll.50, col.11, ll.45-50)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of the modified Appelt et al. to include the method of method of using email and address book entry as sources of information as taught by Uppaluru in order to adding information to the grammar based on information from e-mail message and address book entry. E-mail and address book are integral part of an email service and is widely used over the internet.</p>
<p>Claim(s) 21</p>	<p><u>The modified Appelt et al. show:</u></p> <p>A method as recited in claim 1, further comprising:</p> <p>automatically updating the grammar (Weber, col.3, ll.4-7; col.12, ll.53-67) based on text information (Appelt et al., Fig.1: 103) or multimedia information (Appelt et al., Fig.11: 550) as the source of information stored for a user asking the spoken question (user query).</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>the source of information is calendar information.</p> <p><u>However, Uppaluru teaches:</u></p> <p>Using calendar information as a source of information. (col.9, ll.50; col.11, ll.36-44)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of the modified Appelt et al. to include the method of using calendar information as sources of information as taught by Uppaluru in order to update grammar based on calendar information. Calendar information is integral part of an email service or a web-based service. It is widely used and available over the internet.</p>
Claim(s)	<u>The modified Appelt et al. show:</u>

22	<p>A method as recited in claim 21, wherein said updating includes adding information to the grammar. (Weber, col.3, ll.4-7; col.12, ll.53-67)</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>recognizing for questions about locations found in the calendar information.</p> <p><u>However, Uppaluru teaches:</u></p> <p>recognizing for questions about locations (e.g., date and time information for appointment service) found in the calendar information. (col.11, ll.36-44)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of the modified Appelt et al. to include the teaching of Uppaluru in order to recognize questions about locations found in the calendar information during the grammar updating process. This would help automate the grammar updating process if the location information can be extracted from the calendar information.</p>
Claim(s) 36	<p><u>The modified Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 34,</p> <p>wherein said method further comprises adding information to the grammar. (Weber, col.3, ll.4-7; col.12, ll.53-67)</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>the message is an e-mail message, and</p> <p>the source of information is from an address book entry for the sender of the e-mail.</p> <p><u>However, Uppaluru teaches:</u></p> <p>Using e-mail message as a source of information retrieved for responding to user</p>

	<p>queries. (col.9, ll.38-50; col.29-49)</p> <p>Using address book entry as a source of information. (col.9, ll.50, col.11, ll.45-50)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of the modified Appelt et al. to include the method of method of using email and address book entry as sources of information as taught by Uppaluru in order to adding information to the grammar based on information from e-mail message and address book entry. E-mail and address book are integral part of an email service and is widely used over the internet.</p>
Claim(s) 37	<p><u>The modified Appelt et al. show:</u></p> <p>A computer readable medium as recited in claim 31, further comprising:</p> <p>automatically updating the grammar (Weber, col.3, ll.4-7; col.12, ll.53-67) based on text information (Appelt et al., Fig.1: 103) or multimedia information (Appelt et al., Fig.11: 550) as the source of information stored for a user asking the spoken question (user query).</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>the source of information is calendar information.</p> <p><u>However, Uppaluru teaches:</u></p> <p>Using calendar information as a source of information. (col.9, ll.50; col.11, ll.36-44)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of the modified Appelt et al. to include the method of using calendar information as sources of information as taught by Uppaluru in order to update grammar based on calendar information. Calendar information is integral part of an email service or a web-based service. It is widely used and available over the internet.</p>
Claim(s) 38	<p><u>The modified Appelt et al. show:</u></p>

	<p>A computer readable medium as recited in claim 37, wherein said updating includes adding information to the grammar. (Weber, col.3, ll.4-7; col.12, ll.53-67)</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>recognizing for questions about locations found in the calendar information.</p> <p><u>However, Uppaluru teaches:</u></p> <p>recognizing for questions about locations (e.g., date and time information for appointment service) found in the calendar information. (col.11, ll.36-44)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of the modified Appelt et al. to include the teaching of Uppaluru in order to recognize questions about locations found in the calendar information during the grammar updating process. This would help automate the grammar updating process if the location information can be extracted from the calendar information.</p>
Claim(s) 45	<p><u>The modified Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 39, wherein said update means automatically updates the grammar (Weber, col.3, ll.4-7; col.12, ll.53-67) based on text information (Appelt et al., Fig.1: <b>103</b>) or multimedia information (Appelt et al., Fig.11: <b>550</b>) as the source of information stored for a user asking the spoken question (user query).</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>the source of information is calendar information.</p> <p><u>However, Uppaluru teaches:</u></p> <p>Using calendar information as a source of information. (col.9, ll.50; col.11, ll.36-44)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the update means of the modified Appelt et al. to include the</p>

	means of using calendar information as sources of information as taught by Uppaluru in order to update grammar based on calendar information. Calendar information is integral part of an email service or a web-based service. It is widely used and available over the internet.
Claim(s) 46	<p><u>Appelt et al. show:</u></p> <p>An interactive voice response system as recited in claim 45, wherein said update means adds information to the grammar. (Weber, col.3, ll.4-7; col.12, ll.53-67)</p> <p><u>The modified Appelt et al. do not show:</u></p> <p>recognition means for recognizing questions about locations found in the calendar information.</p> <p><u>However, Uppaluru teaches:</u></p> <p>recognition means for recognizing questions about locations (e.g., date and time information for appointment service) found in the calendar information. (col.11, ll.36-44)</p> <p>It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the means of the modified Appelt et al. to include the teaching of Uppaluru in order to recognize questions about locations found in the calendar information during the grammar updating process. This would help automate the grammar updating process if the location information can be extracted from the calendar information.</p>

4. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Appelt et al. (U.S. Patent 6,601,026 B2) in view of Weber (U.S. Patent 6,434,524 B1) and Uppaluru (U.S. Patent 5,915,001), and further in view of Jones (U.S. Patent 5,524,139).

Claim(s) 48	<p><u>The modified Appelt et al. do not show:</u></p> <p>An information services system as recited in claim 47, further comprising:</p>
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a master control unit to control operation of said information services system, and

a plurality of application processing units, coupled to said master control unit, each including

at least one processor unit providing said processor,

one of said at least one storage unit, coupled to said at least one processor unit, and

at least one telephone interface unit coupled to said at least one processor unit.

Jones teaches:

a master control unit to control (MCU 38) operation of said information services system (Fig.1), and

a plurality of application processing units (APU 44<sub>1</sub>, APU 44<sub>2</sub>) coupled to said master control unit (MCU 38), each including

at least one processor unit (CPU 58) providing said processor,

one of said at least one storage unit (memory 60), coupled to said at least one processor unit, and

at least one telephone interface unit (T1 Interface 76) coupled to said at least one processor unit.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system architecture of the modified Appelt et al. to include the system architecture of Jones in order to provide a system that enables the process of accessing an information service to be automated.



***Allowable Subject Matter***

5. Claims 13, 17, 30, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claim(s) 13	<p>The prior art fails to show:</p> <p>A method as recited in claim 12,</p> <p>wherein said determining is performed by outputting an audio signal containing a list of available news report providers; and</p> <p>receiving selection of the at least one news report providers by the user.</p>
Claim(s) 17	<p>The prior art fails to show:</p> <p>A method as recited in claim 15, further comprising:</p> <p>comparing message words in the at least one message with information in a synonym database to determine synonyms for the message words; and</p> <p>adding the synonyms to the grammar.</p>
Claim(s) 30	<p>The prior art fails to show:</p> <p>A computer readable medium as recited in claim 29, wherein said determining is performed by:</p> <p>outputting an audio signal containing a list of available news report providers; and</p> <p>receiving selection of the at least one news report providers by the user.</p>
Claim(s)	<p>The prior art fails to show:</p>

33	<p>A computer readable medium as recited in claim 31, wherein said method further comprises:</p> <p>comparing message words in the at least one message with information in a synonym database to determine synonyms for the message words; and</p> <p>adding the synonyms to the grammar.</p>
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### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

#### U.S. Patent Documents:

- |     |                 |         |                |
|-----|-----------------|---------|----------------|
| [1] | 2002/0006126 A1 | 01/2002 | Johnson et al. |
| [2] | 6,078,886       | 06/2000 | Dragosh et al. |
| [3] | 6,418,440 B1    | 07/2002 | Kuo et al.     |
| [4] | 2001/0054085 A1 | 12/2001 | Kurganov       |
| [5] | 6,584,464 B1    | 06/2003 | Warthen        |

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Lao whose telephone number is 703-305-8955.

The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Tim Lao  
Examiner  
Art Unit 2655

TL  
03/05/04



**RICHEMOND DORVIL**  
**SUPERVISORY PATENT EXAMINER**